

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 640-2720 FAX: (602) 640-2730

In Reply Refer To:
AESO/SE
2-21-99-F-264

August 26, 1999

Memorandum

To: ARD-Federal Aid, Fish and Wildlife Service, Albuquerque, New Mexico

From: Field Supervisor

Subject: Section 7 Consultation for Reintroduction of Gila Trout into Arizona

The U.S. Fish and Wildlife Service's Arizona Ecological Services Office has reviewed your June 18, 1998, biological assessment for the reintroduction of Gila trout (*Oncorhynchus gilae*) into Dude Creek, on the Tonto National Forest, in Gila County, Arizona. Your request for formal section 7 consultation under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) was received on June 23, 1999. This action, jointly proposed by the U.S. Fish and Wildlife Service's Federal Aid and the Tonto National Forest's Payson Ranger District, is being coordinated by the Arizona Game and Fish Department, who you have designated as applicants in this consultation. It is our understanding that Federal Aid has served as the lead agency in this consultation.

Your June 18, 1999, memorandum concluded that the proposed action would have no effect on the proposed endangered Blumer's dock (*Rumex orthoneurus*). This species was withdrawn as proposed on August 9, 1999 (64 FR 43132). Further, the biological assessment concludes that the proposed action will have no effect on the American peregrine falcon (*Falco peregrinus anatum*) or the Mexican spotted owl (*Strix occidentalis lucida*). The American peregrin falcon was also removed from the list of endangered and threatened wildlife on August 25, 1999 (64 FR 46542). The intra-Service section 7 handbook also requires that candidate species be evaluated as if they are proposed for listing. The biological assessment concluded that the proposed action would have no effect on the candidate Chiricahua leopard frog (*Rana chirichuensis*). These species will not be evaluated further in this consultation.

This biological opinion is based on information provided in the June 18 biological assessment, telephone conversations between our staffs, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file in this office.

CONSULTATION HISTORY

Informal discussions lead by the AGFD on the possible reintroduction of Gila trout into Arizona have been underway for several years. AGFD hosted a meeting on July 8, 1998, to specifically address the possible reintroduction of fish into Dude Creek. In late January 1999, the Tonto National Forest's Payson Ranger District held two public meetings, one in Phoenix, and one in Payson, to obtain public opinion on the issue of reintroducing Gila trout into Dude Creek. A June 18, 1999, request for formal consultation was received from the Service's Division of Federal Aid on June 23, 1999. This action is proposed jointly by Federal Aid and the Tonto National Forest. AGFD has been designated an applicant in this consultation. A draft biological opinion was sent to Federal Aid and the Tonto National Forest on August 9, 1999. Cheryl Carothers, Payson Ranger District, made a few editorial changes which were incorporated into this document. Don Pollock, Zone Wildlife Biologist for the Tonto National Forest, called Debra Bills of this office on August 23, 1999, to state that the Forest Service had no additional comments. Pat Mullane, Federal Aid, also called to say they had no changes to the draft document.

BIOLOGICAL OPINION

After reviewing the current status of the Gila trout, the environmental baseline for the action area, the effects of transport and subsequent land management, and the cumulative effects, the Service concludes that this action, as proposed, is not likely to jeopardize the continued existence of the Gila trout.

DESCRIPTION OF PROPOSED ACTION

Fish Reintroduction

The AGFD, with funding from the Service's Division of Federal Aid, will transport between 50 and 1,500 juvenile and/or adult Gila trout from Mora National Fish Hatchery in New Mexico to Dude Creek in Arizona before the end of this calendar year. Fish will either be transported by helicopter or truck to the Dude Creek area. Where driving is not possible, fish will be transported to the stocking sites along Dude Creek by pack animal, backpack, or helicopter.

Beginning in 2000, between 200 and 2,500 Spruce Creek Gila trout may be added to Dude Creek annually, as necessary, to enhance the genetic diversity and supplement the existing fishery. Fish will come from hatchery stock if it is available. If the hatchery program is not successful, additional fish will be moved directly from Spruce Creek (or other Spruce Creek sources) to Dude Creek in subsequent years.

Dude Creek will be managed in accordance with the existing multiple use management activities including forest management, livestock management, fire management, and recreation management.

Recreation

The area in and around Dude Creek will continue to be managed for recreation by Tonto NF. Camping, hiking, fishing, and day uses are common in the area. The Highline Trail, a popular hiking route, crosses the upper reach of Dude Creek. Off Highway Vehicle use may occur around Dude Creek.

Approximately four miles downstream from Dude Creek, Federal Aid funds support a put-and-take rainbow trout (*O. mykiss*) fishery managed by AGFD. AGFD normally stocks approximately 20,700 fish. In large part, rainbow trout stocking is reliant upon inter-basin water transfer from Blue Ridge Reservoir on East Clear Creek. Consequently, stocking numbers have dropped to as few as 5,940 in 1996 when no flow was available for inter-basin transfer (AGFD stocking records). During normal water years, the fishery supports approximately 50,000 angler use days per year within a seven-mile stretch of the East Verde at and downstream of the village of Washington Park (Warnecke 1988).

Forest Management

The area in the Dude Creek watershed below the Highline Trail is managed for various silvicultural activities including precommercial thinning, commercial thinning, salvage sanitation harvest, regeneration harvest, and fuelwood harvest. Thinning and treatment for mistletoe (*Arceuthobium vaginatum*) also occurs. The Bull Owl Timber Sale authorizes the harvest (non-uniform intermediate/irregular group shelterwood), precommercial thinning, and broadcast burning in the area below the perennial portion of Dude Creek. All treatments are intended to improve the health and vigor of the stands, while providing for future protection during wildfires.

Livestock Grazing

Dude Creek is within the East Verde Pasture of the Cross V Allotment. Current utilization limits require that stream bank alterations be limited to less than 20% of alterable banks, riparian herbaceous species utilization limit is established at 50% of species biomass, and woody riparian species utilization is limited to 50% of leaders browsed on the top 1/3 of plants less than 4.5 feet in height (USFS 1985, 1996, 1999, and Bazan 1998 as described in Timmons 1999). Migratory and resident elk herds also use the area (D. Pollock, Tonto N.F. pers. comm.).

Fire Management

Given the catastrophic 1990 Dude fire, an aggressive fire plan has been developed for this area. Prescribed fire will burn blocks within the project area, using a rotational time frame, during the cooler times of the year. The goal of the plan is for a reduction in the density of shrub cover, an increase in the age-class distribution of shrubs, an increase in the diversity of herbaceous species, and a reduction in fuel continuity (Tonto NF 1998).

Fire management has been modified to include the presence of Gila trout in Dude Creek. The current burn plan will prohibit burning within 100 feet of Dude Creek, no burning will be conducted on immediate slopes leading down to Dude Creek, and all burning will be conducted away from stream boundaries (Timmons 1999). Funding and planning for two burns in upper Dude Creek watershed have already been allocated and should be completed by December 2002 with one year separating the two burns.

STATUS OF THE SPECIES

The Gila trout is one of two native trout species known in Arizona. Prior to 1900, Gila trout were found in Arizona's Verde, San Francisco, and Agua Fria river systems, but the species was extirpated from Arizona around the turn of the century (USFWS 1993). In New Mexico, the fish were found throughout the Gila and San Francisco river basins. By the 1960's, Gila trout were divided into five stocks or populations: Main Diamond, South Diamond, McKenna, Spruce, and Iron creeks. Today they exist in isolated populations throughout the upper portion of the Gila basin (Minckley 1973, Propst and Stefferud 1997). The replication and security of each of the five populations are essential for the recovery of the species (USFWS 1993).

Gila trout from Main Diamond Creek were translocated into Gap Creek, a tributary of the Verde River, in 1974. By 1981, the population was estimated at 150 fish. During a 1987 survey, the population was estimated at 70 fish, but they were restricted to about 1.5 miles of stream (Warnecke 1987). Although the population persisted for at least seven years, the fish were later believed lost (USFWS 1993).

Gila trout are a typical cold water species requiring well oxygenated high water quality, cobble substrate, deep narrow channels, and abundant overhanging banks or cover. Gila trout begin spawning activity in early April or whenever water temperatures reach 8 degrees C, and continue through June as water warms with summer (Rinne and Minckley 1991, USFWS 1993, Sublette *et al.* 1990). Adults live in pools, with smaller individuals dependent on overhanging vegetation (Rinne and Minckley 1991). The species inhabits clear runs that are typically narrow and shallow, and feed on aquatic insects including caddisflies, mayflies, chironomids, and beetles (Sublette *et al.* 1990).

The Gila trout was listed as an endangered species in 1967. Major threats to the species include habitat degradation including natural disasters (particularly floods and fires), grazing, timber management, and competition/hybridization with introduced non-native trout (USFWS 1993). In 1988, a flood eliminated more than 90% of the Gila trout in McKnight Creek (Propst and Stefferud 1997). In 1989, a forest fire and associated impacts eliminated the Main Diamond Creek population. Later that same year, drought combined with impacts of a fire reduced the South Diamond Creek population by 95% (USFWS 1996). Wildfires and subsequent ash laden runoff have decimated the Gila trout population in New Mexico many times over the years (USFWS 1993, Propst *et al.* 1992, others). Prior to these events, discussions of downlisting the species from endangered to threatened were underway. The loss to these populations has delayed

downlisting considerations. The presence of rainbow trout or other salmonids in areas designated as Gila trout streams, has required the use of toxicants to eliminate the non-native salmonids and subsequent restoration with Gila trout. The presence of rainbow trout in Dry Creek and Trail Canyon Creek has also lead to *O. mykiss* and *O. gilae* hybrids requiring similar treatment, expenditures of funds and staff time, and a set back in long term persistence of Gila trout. Successful replication of the Spruce Creek lineage of Gila trout into Dude Creek will be a tremendous impetus for reconsidering the downlisting of this species.

Recently, the Spruce Creek fish were determined to represent the native trout of the San Francisco River drainage, including the Blue River. And although conclusive information is lacking on the native trout of Eagle Creek, the proximity of Eagle Creek to the San Francisco drainage, a recent report by the Gila Trout Recovery Team concludes those upper tributaries of Eagle Creek, including Chitty Creek, should hold Gila trout (Gila Trout Recovery Team 1998).

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

In 1990, a catastrophic fire, known by locals as the “Dude fire” burned more than 20,000 acres in the Payson Ranger District of the Tonto NF, including most of the Dude Creek drainage. At that time, a successful brook trout fishery (*Salvelinus fontinalis*) existed in Dude Creek. Most of the brook trout in Dude Creek likely perished with the extreme temperatures of the fire. Those that managed to survive, were later lost with the subsequent massive erosion of the uplands. Goals for the Forest Service include the re-establishment of a fishery in Dude Creek within 10 years of the fire (Tonto National Forest 1991).

Perennial flows of Dude Creek are limited to about 3 miles (4.8 km) of stream. At least two natural barriers on Dude Creek consist of waterfalls over bedrock and boulders to prevent the movement of any fish into the creek. Two of the barriers are greater than 1 meter and 2 meters in height and are effective barriers to upstream movement of fish. The lower most barrier, about 1 meter in height, occurs approximately 0.5 mile above the point at which perennial flow ceases. The second barrier, about 2 meters in height, occurs approximately 0.25 mile below the Highline Trail crossing. The area between the perennial flow and the East Verde River is dry in most years creating an additional barrier between the area designated for Gila trout, and the area designated for the rainbow trout fishery.

Pumping water into the East Verde River from Blue Ridge Reservoir occurs annually from April through August. This water pumped by Phelps Dodge Corporation helps support the rainbow

trout fishery during these months and will likely temporarily support Gila trout that move out of Dude Creek into the East Verde. The lack of water pumped into the East Verde results in flows of nearly 0 cfs in the summer to about 5 cfs in the winter (Warnecke 1988).

Recreation

The area in and around Dude Creek will continue to be managed for recreation by Tonto NF. Camping, hiking, fishing, OHV use, and day use continue in the area, although Dude Creek will be closed to fishing.

Forest Management

Timber management including precommercial thinning, commercial thinning, salvage sanitation harvest, regeneration harvest, fuelwood harvest, and thinning and treatments for mistletoe continue in the project area. Additional projects will require separate consultation.

Livestock Grazing

Dude Creek is in the same pasture as the East Verde River. In the recent past, overutilization has been identified as a problem in the East Verde portion of the allotment before problems have been noted in Dude Creek (Don Pollock, Tonto NF, pers. comm). Currently, Dude Creek contains a high amount of dead and down logs and other material, making it less suitable for cattle than the East Verde. A new permittee has been issued a permit.

Fire Management

Prescribed fire will burn blocks within the project area, using a rotational time frame, during the cooler times of the year will continue in the area. A Biological Assessment and Evaluation for the project titled "Prescribed Burning within the Dude Fire Above the Highline Trail" was prepared in March 1998. Section 7 consultation for this project was completed when the Forest Service determine no effect to the Mexican spotted owl or the peregrine falcon. The current fire management plan specifically calls for two such events before 2001. The plan also anticipates suppression of wildfires.

EFFECTS OF THE ACTION

Effects of removal from Donor Population

Gila trout currently held at Mora National Fish Hatchery were gathered from Spruce Creek under a scientific collecting permit [section 10(a)(1)(A)] and are held specifically for stocking in Arizona. Partial removal of the Spruce Creek Gila trout should not have any additional consequences on Gila trout in New Mexico. Supplemental stocking from the hatchery should also not result in additional impacts to the species. Complete removal of the hatchery stock for

the initial stocking will require additional removal of wild fish from Spruce Creek. Insufficient production at the hatchery will also require the removal of wild fish.

Recreation

Camping, hiking, fishing, OHV use, and day use continue in the area. Several jeep trails, dirt roads, and Forest Road 195 are in the Dude Creek watershed. All but FR 195 have either been closed or will be closed to OHV use under the Resource Access Travel Management plan. Prior to the Dude fire, the Highline Trail received moderate to high use. Although use is much lower today, the higher levels can be expected to return as the removal of down material improves trail accessibility, and overall aesthetics of the area improves. The possibility of other trout species entering Dude Creek is of great concern. If trout other than Gila trout are observed in Dude Creek, the fish must be removed, the situation evaluated, and the use of chemical pesticides considered. The use of pesticides in Dude Creek will require separate section 7 evaluation.

Gila trout are also expected to move out of Dude Creek into East Verde, particularly during periods of high runoff. Although these fish cannot be managed once they enter the East Verde, they remain fully protected under the ESA. The persistence of Gila trout in the East Verde is not known, but conditions are not likely to support a permanent population of Gila trout, due to high water temperatures and low flows. According to annual records from information collected near Washington Park (East Verde River Diversion from Clear Creek, near Pine), the stream has no flow for long periods most years (USGS 1998). Predation and/or competition with the many non-native fish in the East Verde is likely. Catch of Gila trout by anglers fishing for rainbow trout in the East Verde is also likely to occur. Posting of signs differentiating rainbow trout from Gila trout, with information on the protected status of Gila trout and the penalties for take is necessary for the protection of Gila trout.

Dude Creek will be closed to fishing, however, illegal fishing may occur. Illegal introduction of rainbow trout upstream from the East Verde to Dude Creek may also occur. Successful, although illegal, introductions are commonly made to add a new game species or forage species to a native fish community (Taylor *et al.* In Courtenay and Stauffer 1984). In addition to disease, competition, and predation, rainbow trout can successfully hybridize with Gila trout. Due to the remote location of Dude Creek, these activities should be minimized. In addition, Dude Creek has remained fishless since the fire as evidenced by surveys conducted by AGFD for the past three years (K. Young, AGFD, pers. comm.).

Forest Management

Timber management including precommercial thinning, commercial thinning, salvage sanitation harvest, regeneration harvest, fuelwood harvest, and thinning and treatment for mistletoe will continue in the project area. The Bull Owl Timber Sale, which authorizes the removal of single suppressed and poorly formed trees and encouraging larger growth of the dominant trees, is the only sale authorized for the Dude Creek watershed. Since all treatments will occur below the

perennial water of Dude Creek, no impacts to Gila trout are anticipated. Additional needs for silvicultural treatment or fuelwood removal projects will require separate consultation.

Livestock Grazing

The most commonly acknowledged impact of livestock grazing on streams is increased sediment production and transport (Platts 1990, Johnson 1992, Weltz and Wood 1994). Negative impacts of sediment to fish and fish habitat is well documented (Newcombe and MacDonald 1991, Barrett 1992, Megahan *et al.* 1992). Excess sediment can also smother invertebrates, reducing production and availability of fish food. Livestock grazing has also been demonstrated to increase nutrients in streams (Kaufman and Krueger 1984). Direct effects from livestock grazing are trampling or ingestion of adults, larvae, or eggs (Roberts and White 1992). The grazing of plants and trampling of vegetation and soil affects both riparian zones and uplands (Marlow and Pogacnik 1985).

Dude Creek is in the same pasture as the East Verde River portion of the allotment. In the recent past, overutilization has been detected as a problem in the East Verde portion before problems arise in the Dude Creek portion although elk use varies (Don Pollock, Tonto NF, pers. comm). Currently, Dude Creek contains a high amount of dead and down logs and other material, making it less accessible for cattle than the East Verde. This can be expected to change over time as down material is removed from the upper portion of the watershed. Cattle disrupt streambanks through chiseling, sloughing, compaction, and collapse. This in turn can lead to wider and shallower stream channels (Armour 1977, Platts and Nelson 1985, Platts 1990, Meehan 1991) which will affect fish habitat elements (Bovee 1982, Rosgen 1994). Given the short yearly duration of cattle use in Dude Creek, and the monitoring schedule of the Tonto NF, these impacts should be minimized in Dude Creek.

Fire Management

Two prescribed fires are scheduled to burn blocks within the project area before 2002. Of the two controlled burns expected to occur, the impacts are expected to be localized and of short duration, resulting in minimal deposits of ash or sedimentation in the creek.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of ESA.

The New Mexico Department of Game and Fish in coordination with AGFD has obtained a scientific collecting permit 10(a)(1)(A) to transfer Gila trout from Spruce Creek directly into Dude Creek. These fish will become part of the larger population of Gila trout transferred from

the hatchery and will be managed and subject to the same provisions as provided in this biological opinion. Since the project area occurs within the jurisdiction of the Tonto National Forest, it is not likely that actions that might affect listed species within the project area would not be considered a Federal action. Actions by individuals whose land is adjacent to the forest or its tributaries may or may not be considered Federal actions. The Service is not aware of any proposed non-Federal action that may affect species or critical habitats considered in this consultation.

SUMMARY

Although the success of this reintroduction effort is not known, and the long term survival of the species in Dude Creek cannot be guaranteed, this action is well planned and if implemented as described in the biological assessment should provide a secure replicate of the Spruce Creek Gila trout lineage. Diligence to the prevention of illegal fishing and/or movement of other trout species into Dude Creek must be maintained, and where possible, corrected.

CONCLUSION

After reviewing the current status of Gila trout, the environmental baseline for the action area, the effects of the proposed reintroduction and subsequent management, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the Gila trout. No critical habitat has been designated for this species, therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by Federal Aid, Tonto NF, or their applicant, so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. Federal Aid and the Tonto NF have a continuing duty to regulate the activity covered by this

incidental take statement. If Federal Aid or Tonto NF (1) fail to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fail to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

AMOUNT OR EXTENT OF TAKE

The Service anticipates that the proposed project would result in incidental take of Gila trout during capture, transport, holding, and stocking, resulting in direct and indirect mortality, harm, and harassment of individuals. The Service anticipates that mortality will not be greater than 25 percent of Gila trout captured, stocked, held, or transported during any given year.

The Service also anticipates incidental take of Gila trout in the form of harassment, harm, capture, and kill from ongoing recreation activities, livestock grazing, and fire management. The take from these ongoing activities will be difficult to detect since losses may be removed from the creek by predators, masked by seasonal fluctuations in numbers or other causes, such as sedimentation, or washed out of Dude Creek into the East Verde River.

As a surrogate measure of take, the Service will consider incidental take to be exceeded if the grazing utilization rates are exceeded, or if the reasonable and prudent measures and terms and conditions are not fulfilled.

If, during the course of the action, the amount or extent of the incidental take anticipated is exceeded, Tonto National Forest or Federal Aid must reinitiate consultation with the Service immediately to avoid violation of section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species, as required by 50 CFR 402.14(i). An explanation of the causes of the taking should be provided to the Service.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. No critical habitat has been designated for this species, therefore, none will be affected.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measure(s) are necessary and appropriate to minimize take:

1. Conduct primary and supplemental stocking and monitoring in a manner which reduces injury or death to individual Gila trout.

2. Federal Aid or Tonto National Forest, depending on the action, (or AGFD as designated applicant) will provide a means to determine the level of incidental take that actually results from the project.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of ESA, the Division of Federal Aid and Tonto National Forest must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

To implement reasonable and prudent measure #1.

- 1.1 Transfers between New Mexico and Arizona shall be conducted by personnel with sufficient experience. The Gila Trout Recovery Team representatives should be solicited for recommendations and field participation.
- 1.2 Monitoring of the project area and other areas that could be affected by the proposed action shall be done to ascertain take of individuals of the species and/or of its habitat that causes harm or harassment to the species. The first year following introduction, assessment of stocking success shall be done visually to minimize impacts and stress to populations, as recommended by the Gila Trout Recovery Team. Once the population is established, monitoring will be accomplished using the following protocol as described in Appendix A of the 1993 Gila trout Recovery Plan which reads:

Two to four permanent sites will be established on each stream. Sites will be selected to encompass the array of habitats available to Gila trout in the stream. The number of sites and length of sites per stream will be dependent upon stream size. Short streams, such as Spruce Creek, will have a minimum of two permanent sites. Longer streams, such as Iron Creek, will have a minimum of four. No permanent site markers will designate sites; rather, location will be on USGS 7.5' topographic maps. Reference photo points will be established at each site and photos taken during each sampling effort.

Fish collection will be by backpack electrofishing gear. One sampling pass will be made. As many fish as possible will be collected while exercising care to minimize sampling mortality. All collected specimens will be weighed, measured, and returned to the stream live. Any mortalities will be preserved and curated. Voltage, amperage, pulse width, and frequency will be recorded for each sampling pass. Time and area electrofished will be recorded.

At one permanent site, a population/density estimate (including length/weight data) for each habitat type (e.g. pool, run, riffle, undercut bank) will be accomplished. Data for each habitat type will be recorded separately.

At each permanent site, water temperature, dissolved oxygen, and pH will be measured. If deemed necessary, other water quality parameters will be measured.

The entire stream reach supporting Gila trout will be visually surveyed to gain an overall impression of the security of the stream and relative habitat quality.

All data gathered on each population monitored in a year will be summarized in a brief report to be submitted by agency representatives. This report will be submitted to the Regional Office, U.S. Fish and Wildlife Service, for transferral to relevant agencies.

To implement reasonable and prudent measure #2.

- 2.1 Re-evaluate the March 1998 Biological Assessment and Evaluation, Prescribed Burning within the Dude Fire Above the Highline Trail, prepared by the Payson Ranger District, to determine if terms and conditions for Gila trout are appropriate for the proposed burns.
- 2.2 Signs posting prohibition on angler possession of Gila trout shall be placed within 30 days of the initial stocking.
- 2.3 An annual report of the results of the monitoring, including complete and accurate records of all incidental take that occurred during the course of the project, will be submitted to the Gila Trout Recovery Team and the Service. This report will also describe collections of Gila trout on the East Verde, and how the terms and conditions of all RPMs in this incidental take statement were implemented.

Review requirement: The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Division of Federal Aid and the Tonto National Forest must immediately provide an explanation of the causes of the taking and review with the AESO the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Investigate opportunities for a hatchery stock of Spruce Creek fish in Arizona.
2. Investigate opportunities for introduction of Gila trout into other Arizona waters.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in the request for consultation. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate your continued coordination. Please refer to the consultation number 2-21-99-F-264 in future correspondence concerning this project. If we can be of further assistance, please contact Debra Bills (ext 239) or Tom Gatz (ext. 240).

/s/ David L. Harlow

cc: Regional Director, Fish and Wildlife Service, Albuquerque NM (GARD-AZ/NM)
District Ranger, Payson Ranger District, Tonto National Forest, Payson, AZ
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM
Project Leader, Fish and Wildlife Service, Pinetop, AZ

Director, Arizona Game and Fish Department, Phoenix, AZ

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August 9, 1999

Memorandum

To: Geographic Manager, Arizona-New Mexico, Fish and Wildlife Service,
Albuquerque, New Mexico

From: Field Supervisor

Subject: Section 7 Consultation for the reintroduction of Gila Trout into Arizona

As discussed in conversation between our respective staffs, the U.S. Fish and Wildlife Service Arizona Ecological Service Field Office is transmitting the attached draft biological opinion for the subject project for formal section 7 consultation as provided by the Endangered Species Act, as amended. The draft opinion is provided for information purposes only. However, if you note errors or need clarification of information in the draft opinion, please contact this office. We will finalize the biological opinion after you have notified us that you have reviewed it and there are no errors and no need for further clarification.

A copy will be sent to the Tonto National Forest, the other Federal agency in this consultation. It should be noted that draft documents generated under the ESA section 7 consultation process are generally not released until after a final biological opinion has been issued, so as not to discourage frank discussion between the parties involved (under exemption 5 under the Freedom of Information Act). If Federal Aid or the Forest Service chooses to release this draft biological opinion to Arizona Game and Fish Department, the applicant in this consultation, or to other parties, it will become part of the public record and will no longer be determined to be "exempt" under FOIA.

If we can be of further assistance, please contact Debra Bills (x239) or Tom Gatz (x240).

Sincerely,

David L. Harlow

Attachment

cc: Regional Director, Fish and Wildlife Service, Albuquerque NM (Attn: P. Mullane)
District Ranger, Payson Ranger District, Tonto National Forest, Payson, AZ
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM
Project Leader, Fish and Wildlife Service, Pinetop, AZ
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